

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is requested.

Claims 1-14 and 32-46 have been rejected under 35 U.S.C. § 102 as being anticipated by WO 94/04313 (hereinafter WO '313); Claims 1-14 and 32-46 remain active.

Considering then the rejection of Claims 1-14 and 32-46 under 35 U.S.C. § 102 as being anticipated by WO '313, it is noted that an object of the present invention is to provide improved cleaning systems and improved cleaning methods by enabling the interior of an object to be cleaned when it is not reachable by an operator's hands or by an instrument. The present invention still further aims at enabling easy cleaning of an object even though there exists convex or concave portions on the area of the object to be cleaned and at enabling an easy adjustment of the cleaning power. The invention still further aims at effectively cleaning the area of the object to be cleaned and at allowing a large margin for adjusting cleaning characteristics.

Other objects of the invention are reducing the cost of the cleaning operation, effectively performing the rubbing/cleaning operation, effectively cleaning even narrow areas having concave or convex portions, causing the dirt to be easily stripped off, thereby effectively performing the cleaning operation, performing successive cleaning on a wide area, and preventing residual dirt from remaining after cleaning.

Still other objects of the invention are: enabling performing successive cleaning operations in a limited area and eliminating residual dirt after cleaning, reducing the impact cleaning has on the environment, enabling the performing of cleaning in a short time, and effectively removing residual dirt remaining on the object after cleaning.

In view of the foregoing, it can be understood that in accordance with the present invention a cleaning medium is caused to be moved by a magnetic field so as to rub the

interior of an object or body to be cleaned. Accordingly, Claims 1 and 32 have now been appropriately amended to claim the above-noted features, particularly insofar as a review of WO '313 fails to indicate a teaching or disclosure of a cleaning system having a cleaning medium located within a body or object to be cleaned, a magnetic field generating device for moving the cleaning medium within the body or object wherein a portion of the body or object to be cleaned is cleaned by a rubbing action of the cleaning medium introduced inside the body or object. To the contrary, the object in WO '313 is to solve the problem wherein the surface of an abrading surface is complimentary (or the same as) to the surface of a product so that the form of the surface of the abrading device is inevitably complex, as shown in Figures 3 and 4 of such reference, and serves to clean the exterior surface of the object 14, 28 to be cleaned. In WO '313, the invention set forth therein sets an abrasion area in a magnetic viscous fluid. The abrasive surface is formed by controlling the viscosity of the magnetic viscous fluid in the abrasion area. An object to be abraded is brought into contact with the abrasive surface and the exterior surface thereof is abraded by moving both the object and the magnetic viscous fluid wherein the magnetic viscous fluid is controlled by the magnetic field.

In the embodiment shown in Figure 5 of WO '313, an object is rotatable, as explained at page 9, lines 6-19 thereof wherein the magnetic field is indicated as being applied while the MP-fluid is not being pumped through the work-piece 34, allowing the formation of a closely fitted polishing tool against the inner surface of the workpiece 34. Thereafter, the workpiece is rotated. As can thus be appreciated in this embodiment, there is no teaching or disclosure cleaning of the inner surface of the workpiece by moving the cleaning medium within the body by application of a magnetic force to the magnetic substance, as presently claimed.

It is further noted that in WO '313 controls the magnetic viscous fluid by the magnetic field and is not used to clean by a rubbing action the interior portion of objects 14 and 28, and when cleaning the interior of object 34, does not move the cleaning medium and instead rotates the workpiece 34. Thus, the resulting mechanisms utilized in WO '313 are complex in nature, unlike the present invention. As can also be appreciated, in WO '313 the magnetic field is generated to control the yielding point of the magnetic viscous fluid but not move the fluid and press the cleaning against an object to be cleaned by the magnetic field as, to the contrary, is an advantageous feature of the present invention. It is therefore submitted that the structure and functioning of the present invention as presently claimed clearly differs from that taught or disclosed in WO '313.

It is further submitted that Claim 32 has been amended to contain the limitations mentioned hereinabove with regard to Claim 1 and it is therefore submitted that independent Claim 32 also merits indication of allowability.

Applicants further note that each of the claims dependent upon Claims 1 or 32 contain limitations having no corresponding teaching or disclosure in WO '313 or any of the remaining references of record. It is therefore submitted that each of such claims also patentably define over the prior art of record.

In view of the foregoing, an early and favorable Office Action is believed to be in order and the same is hereby respectfully requested.

Respectfully submitted,

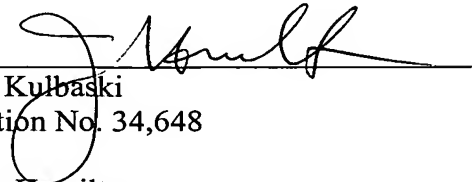
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